CLAIMS

1 (amended): A ~~receiver and~~ reflecting micro-optics solar concentrator which reflects the sun onto a solar energy receiver, comprising:

a) a solar concentrator with anisotropic rotatable specular reflection miniature mirrors embedded in balls ~~reflectors~~ disposed in a surrounding medium of an optically transmissive lubricating fluid disposed behind an optically transmissive surface;

b) means for aligning ~~said~~ the anisotropic rotatable miniature specular reflection mirrors ~~reflectors~~;

c) means for tracking the sun with said mirrors ~~source of light~~; and

d) means for focusing said reflecting system unto said solar energy receiver.

2 (amended): The apparatus of claim 1, wherein said solar energy receiver is ~~supported by at least one rod~~ above said concentrator.

3. (cancelled): The apparatus of claim 1, wherein at least one rod acts as a conduit to carry electrical wires to and from said receiver.

4 (amended): The apparatus of claim 1, wherein said reflecting solar micro-optics concentrator is adjacent to and supported by the ground.

5 (amended): The apparatus of claim 1, wherein the said reflecting micro-optics solar concentrator is in modular form.

6 (cancelled): The apparatus of claim 1, wherein said receiver has fins for enhanced convective cooling.

7 (amended): The apparatus of claim 1, wherein the aligning means is at least one external electric field wand.

8 (amended): The apparatus of claim 1, wherein the aligning means is at least one external magnetic field wand.

9 (amended): The apparatus of claim 1, wherein said optically transmissive surface is covered by a plurality of ~~at least one~~ removable plastic films.

10. The apparatus of claim 1, wherein a plurality of micro-optics solar concentrators are disposed in different angular orientations.

11 (amended): The apparatus of claim 1, wherein a plurality of micro-optics solar concentrators and solar energy receivers are each disposed in different angular orientations comprising at least one pair of concentrators and receivers in substantially parallel alignment.

12 (amended): The apparatus of claim 1, wherein a plurality of sensors are dispersed on the surface of said ~~micro-optics~~ solar energy receiver ~~concentrator~~ to sense solar beam mis-stearing.

13 (amended): The apparatus of claim 1, wherein a plurality of sensors dispersed on the surface of said ~~micro-optics~~ solar energy receiver ~~concentrator~~ to sense solar beam mis-stearing are connected to a circuit for fail-safe defocusing of the solar beam.

14 (amended): The apparatus of claim 1, wherein at least one pair of solar concentrators and solar receivers are placed under a transparent cover.

15 (amended): A method of concentrating and receiving ~~solar~~ energy from the sun provided by a solar energy receiver and solar concentrator with ~~anisotropic micro optic~~ miniature mirror reflectors embedded in balls comprising the steps of:

a) aligning said ~~anisotropic micro optic~~ miniature mirror reflectors;

b) tracking the sun with said mirrors ~~source of light~~; and

c) focusing the miniature mirrors ~~reflecting system~~ unto said solar energy receiver;

16 (amended): The method of claim 15 further comprising the step of supporting the solar energy receiver ~~by at least one rod~~ above said solar concentrator.

17. (cancelled): The method of claim 15 further comprising the step of utilizing at least one rod as a conduit to carry electrical wires to and from said receiver.

18 (amended): The method of claim 15 further comprising the step of placing ~~said~~ the solar micro-optics concentrator on the ground.

19 (amended): The method of claim 15 further comprising the step of constructing ~~said~~ the solar micro-optics concentrator in modular form.

20 (cancelled) The method of claim 15 further comprising the step of providing said receiver with fins for enhanced convective cooling.

21 (amended): The method of claim 15 further comprising the step of aligning said miniature mirror reflectors by means of an external electric field wand.

22 (amended): The method of claim 15 further comprising the step of aligning said miniature mirror reflectors by means of an external magnetic field wand.

23 (amended): The method of claim 15 further comprising the step of fiducializing the orientation of the miniature mirror reflectors in situ.

24 (amended): A method for improving the alignment ~~capability of~~ operability of rotatable miniature reflectors of a micro-optics solar concentrator system for concentrating reflected sunlight disposed in a surrounding medium of an optically transmissive lubricating fluid retained between upper and lower sheets, the lubricating fluid disposed behind an optically transmissive surface, the method comprising the steps of:

a) heating the solar concentrator for no more than four hours ~~a limited time~~; and

b) agitating the rotatable miniature reflectors relative to the surrounding media during heating.

25. The method of claim 24 wherein the agitation is provided by vibration of the said micro-optics system.

26. The method of claim 24 wherein the agitation is provided by rotation of the said rotatable miniature reflectors.

27. The method of claim 24, wherein the display is heated in the range of 35 to 90 degrees Centigrade.

28. The method according to claim 24, wherein the rotatable miniature reflectors are balls.

29. The method according to claim 24, wherein the rotatable miniature reflectors are generally cylindrical.

30. The method according to claim 24, wherein the rotatable miniature reflectors are electromagnetically anisotropic and wherein the agitating step includes alternating an electriomagnetic field and thereby rotating the anisotropic reflectors relative to the surrounding media.

31. The method according to claim 24, wherein an alternating electric field is driven at one to three times the alignment field for the concentrator.

32. The method according to claim 24, wherein an alternating magnetic field is driven at one to three times the alignment field for the concentrator..

33. The method according to claim 24, wherein a manufacturing step includes drawing a vacuum between the said sheets so as to degas the medium therein.

34. (new) The method according to claim 15, wherein the orientation of the mirrored balls is carried out in situ by means of a fiducializing sensor.

CLAIMS

1 (amended): A reflecting micro-optics solar concentrator which reflects the sun onto a solar energy receiver, comprising:

a) a solar concentrator with anisotropic rotatable specular reflection miniature mirrors embedded in balls ~~reflectors~~ disposed in a surrounding medium of an optically transmissive lubricating fluid disposed behind an optically transmissive surface;

b) means for aligning the anisotropic rotatable miniature specular reflection mirrors;

c) means for tracking the sun with said mirrors; and

d) means for focusing said reflecting system unto said solar energy receiver.

2 (amended): The apparatus of claim 1, wherein said solar energy receiver is supported above said concentrator.

3. (cancelled):

4 (amended): The apparatus of claim 1, wherein said reflecting solar micro-optics concentrator is adjacent to and supported by the ground.

5 (amended): The apparatus of claim 1, wherein the said reflecting micro-optics solar concentrator is in modular form.

6 (cancelled):

7 (amended): The apparatus of claim 1, wherein the aligning means is at least one external electric field wand.

8 (amended): The apparatus of claim 1, wherein the aligning means is at least one external magnetic field wand.

9 (amended): The apparatus of claim 1, wherein said optically transmissive surface is covered by a plurality of removable plastic films.

10. The apparatus of claim 1, wherein a plurality of micro-optics solar concentrators are disposed in different angular orientations.

11 (amended): The apparatus of claim 1, wherein a plurality of micro-optics solar concentrators and solar energy receivers are each disposed in different angular orientations comprising at least one pair of concentrators and receivers in substantially parallel alignment.

12 (amended): The apparatus of claim 1, wherein a plurality of sensors are dispersed on the surface of said solar energy receiver to sense solar beam mis-stearing.

13 (amended): The apparatus of claim 1, wherein a plurality of sensors dispersed on the surface of said solar energy receiver to sense solar beam mis-stearing are connected to a circuit for fail-safe defocusing of the solar beam.

14 (amended): The apparatus of claim 1, wherein at least one pair of solar concentrators and solar receivers are placed under a transparent cover.

15 (amended): A method of concentrating and receiving energy from the sun provided by a solar energy receiver and solar concentrator with miniature mirror reflectors embedded in balls comprising the steps of:

a) aligning said miniature mirror reflectors;

b) tracking the sun with said mirrors; and

c) focusing the miniature mirrors ~~reflecting system~~ unto said solar energy receiver;

16 (amended): The method of claim 15 further comprising the step of supporting the solar energy receiver above said solar concentrator.

17. (cancelled):

18 (amended): The method of claim 15 further comprising the step of placing the solar micro-optics concentrator on the ground.

19 (amended): The method of claim 15 further comprising the step of constructing the solar micro-optics concentrator in modular form.

20 (cancelled)

21 (amended): The method of claim 15 further comprising the step of aligning said miniature mirror reflectors by means of an external electric field wand.

22 (amended): The method of claim 15 further comprising the step of aligning said miniature mirror reflectors by means of an external magnetic field wand.

23 (amended): The method of claim 15 further comprising the step of fiducializing the orientation of the miniature mirror reflectors in situ.

24 (amended): A method for improving the alignment operability of rotatable miniature reflectors of a micro-optics solar micro-optics solar concentrator system for concentrating reflected sunlight disposed in a surrounding medium of an optically transmissive lubricating fluid retained between upper and lower sheets, the lubricating fluid disposed behind an optically transmissive surface, the method comprising the steps of:

a) heating the solar concentrator for no more than four hours; and

b) agitating the rotatable miniature reflectors relative to the surrounding media during heating.

25. The method of claim 24 wherein the agitation is provided by vibration of the said micro-optics system.

26. The method of claim 24 wherein the agitation is provided by rotation of the said rotatable miniature reflectors.

27. The method of claim 24, wherein the display is heated in the range of 35 to 90 degrees Centigrade.

28. The method according to claim 24, wherein the rotatable miniature reflectors are balls.

29. The method according to claim 24, wherein the rotatable miniature reflectors are generally cylindrical.

30. The method according to claim 24, wherein the rotatable miniature reflectors are electromagnetically anisotropic and wherein the agitating step includes alternating an electriomagnetic field and thereby rotating the anisotropic reflectors relative to the surrounding media.

31. The method according to claim 24, wherein an alternating electric field is driven at one to three times the alignment field for the concentrator.

32. The method according to claim 24, wherein an alternating magnetic field is driven at one to three times the alignment field for the concentrator..

33. The method according to claim 24, wherein a manufacturing step includes drawing a vacuum between the said sheets so as to degas the medium therein.

34. (new) The method according to claim 15, wherein the fiducial orientation of the mirrored balls is carried out in situ by means of a fiducializing sensor.

Respectfully submitted,

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